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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,433	08/08/2001	Jun Koyama	12732-064001	9952

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FISH & RICHARDSON P.C.
1425 K STREET, N.W.
11TH FLOOR
WASHINGTON, DC 20005-3500

EXAMINER

MENGISTU, AMARE

ART UNIT PAPER NUMBER

2673

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,433

Applicant(s)

KOYAMA ET AL.

Examiner

Amare Mengistu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5,8,10,11,33,37,47,48,53,54,70-72,74 and 75 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 5,8,10,11,33,37,47,48,53,54,70-72,74 and 75 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/3/04; 1/18/05; 2/
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **“said memory circuit and said D/A converter are arranged so as to overlap a source signal line”** as recited in claim 33 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 33,37,71,72 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification as originally filed has failed to disclose the recitation of the claims 33,37,71 and 72 "***wherein said memory circuits and said D/A converter are arranged so as to overlap source signal line.***" The specification does not provide a written description as first filed how to make or use a memory circuits and D/A converter are arranged so as to overlap source signal line

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of claim 5, lines 6 "**wherein said each of said pixels stores digital signals**" is not clear. How does a pixel stores digital signals? How is it possible for pixels to store signals?

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5,8,33,47-48,53-54,70-72,74-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Okumura et al (5,945,972)**.

8. As to claims 5,8,47,48,53,54,70, **Okumura et al (hereinafter Okumura)** discloses a liquid crystal display comprising pixels (fig.17 (CLC), fig.27 (CEL)), wherein each of said pixels has n x m memory circuit (see, figs. 3, 5,17), n gate signal lines (fig. 17 (352,354)), n TFTs having gate electrodes (fig. 17 (SW1, SW2)), TFTs has a source region and a drain region (fig.17 (SW1, SW2)) wherein each of said gate electrodes is connected to a corresponding one of said n gate signal line (see, fig.17 (SW1,SW2)). It is also obvious to one skill in the art to recognize that in other

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embodiment of **Okumura** discloses that the pixel includes a D/A converter for converting n bit digital signals stored in said $n \times m$ memory circuits into analog signals (fig. 27 (534)), wherein said each of said pixels stores digital signals corresponding to m frames in the $n \times m$ memory circuits, the output terminal of said D/A converter is connected to LC element (see, fig.27 (531,532), (CEL)) in order to convert the digital signal into an analog signal.

As to claims 33,37,71-72, **Okumura** discloses that said memory circuit and said D/A converter are arranged so as to overlap a gate signal line (see, fig.27).

As to claims 47,48, 74, Since the LCD is formed over a glass substrate, it would have been obvious for **Okumura** memory circuit also to be formed over a glass substrates.

9. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Okumura ET Ia.** (5,945,972) In view of **Nagao** (6,380,876).

As to claims 10 and 11, **Okumura** discloses a liquid crystal display with a signal line driver, but has failed to teach the liquid crystal display source signal driving circuit includes shift registers, first latch circuit, second latch circuit, and switches. **Nagao** is cited to teach that it is well known for LCD to have a source signal line driving circuit (fig.3 (301)) including shift registers (fig.3 (301-1), first latch circuits (fig.3 (301-2)), second latch circuits (fig.3 (301-3)) and switches (fig.3 (301-4)), said first latch circuits hold n bit digital signal upon receiving sampling pulses from said shift registers unit said n bit digital signals are transferred to said second latch circuits, and said switches select

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said n bit digital signals that have been transferred to said second latch circuits one bit at a time to input said selected signals into source signal line (see,fig.3 (301-1) to(301-4)).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to incorporate the LCD driving circuit of **Nagao** into the LCD device of **Okumura**, since this will provide a liquid crystal display device having a circuit comprised of only a small number of elements, and without increased power consumption and also helping ensure a LCD panel picture frame with a narrow width.

Response to Arguments

10. Applicant's arguments with respect to claims 5,8,10-11,33,37,47,48,53,54,70-72,74-75 have been considered but are moot in view of the new ground(s) of rejection.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amare Mengistu whose telephone number is (571) 272-7674. The examiner can normally be reached on M-F,T-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Amare Mengistu
Primary Examiner
Art Unit 2673

AM
4/14,2005